175 Clearly by the 1940's, exchange and employment opportunities play
*177 an important role in respect to this Carib population's adaptation.
161 Men were being regularly engaged in mining activities and increasing
[464] numbers of them were permanent workers for Baird. Despite Peberty's
comments, there is evidence that the reproductive pattern was greatly
changed.

175 In 1960 government census provides the first evidence of this
*177 increase in population size. Unfortunately in this report, the
162 inhabitants between Kokerite and Towakaima were counted with the
Upper Barama River Caribs. In this larger group, there were 565
people, including 285 males and 280 females. As a partial indication
of what portion of these were in the Upper Barama River above
Towakaima, 142 adults from this area were registered to vote in 1961.
Table 6 presents the age structure and sex composition of the larger
[163] Carib group. Also, for the year preceding the census, there were 13
births all occurring to women under 45. Expressed as a crude birth
rate, this is 23.5 births per thousand total population.

175 In the investigation of the change in population size, it must be
657 pointed out that early health care was haphazard at best. Systematic
health care was not available until very recently. It should be noted
that 1960 was the first year the Malaria Eradication Programme was
175 extended into the Upper Barama area. At that time, 271 smears were
657 taken and 23 were positive for malaria. This is an incidence of
164 malaria for 8.6 percent of the population tested. The Malaria
Eradication Programme resumed in the Upper Barama area in the summer
of 1966. At that time, 314 people were tested. Of this number,

[TEXT CONTINUED ON PAGE 60]

of children occurs throughout the segments of this population. The Air Strip population of 333 has 164 or 49.0 percent under ten. The remaining population of 218 in the satellite settlements includes 117 under ten. This is 53.7 percent of this portion of the population. As is apparent, the increase in population size and the change in reproductive pattern responsible for it have occurred commonly among the Upper Barama River Carib population.

With regard to the current reproductive pattern, a married state continues to be common for all adults of reproductive age. Also, there are no restrictions on the sexual activity of married couples, and the practice of couvade which rendered a father inactive in all ways for a few weeks after the birth of his child is being abandoned. Extramarital sexual encounters are common among all ages. Nevertheless, young women become pregnant for the first time usually between the ages of eighteen and twenty-two. After this, they have about twenty-five reproductive years during which a woman tends to give birth to a child every twenty to thirty months.[12] According to this pattern, every fertile woman has the potential to reproduce about twelve to thirteen children.[13] The women in monogamous as well as polygynous unions tend to realize this potential. Solien de Gonzáles (1966) has suggested that long term, intensive lactation may supress ovulation. Although the interplay of behavioral and physiological factors may be complex, the reproductive results in this case are clear.

In the general ratio of women to children in the total population, there are eighty-two women between the ages of twenty and forty-four,

and 171 children in the age category of four years and under. Of course, this discounts incidences of mortality as well as the passage in and out of these age categories with time. More specifically, from July 1970 through June 1971, twenty-five children were born to the segment of the Carib population at Baramita Air Strip. Expressed as a crude birth rate, this is eighty-three births per 100 population. Expressed as a general rate of birth,[14] in this case the ratio of births to women between ages twenty and forty-four, this is 490.3 births per 1000 women. At this rate of growth, coupled with the current negligible rate of mortality, this population will double in size about every ten years or until limiting factors intervene.

The reproductive histories of the women at Baramita Air Strip allow a closer focus on this new reproductive pattern. Among this segment of the population, sixty-three women have borne children.[15] The reproductive histories of fifty-nine of these women were collected and are presented in Table 10. The age categories selected are under twenty-five, twenty-five to thirty-nine, forty to fifty-four, and fifty-five and over. Organized in this manner, it is clear that the reproductive careers that occurred after 1940 are quite different from reproductive careers that did not. The women in the younger age category, forty to fifty-four, show clear evidence of the new reproductive pattern of twenty to thirty month intervals between births. The oldest woman in this group is estimated to be fifty-one. Accordingly, all of these women began reproducing after the availability of employment and market opportunities with the mining companies.

TABLE 10

REPRODUCTIVE HISTORIES OF THE
CARIB WOMEN AT BARAMITA AIR STRIP

• 163
*197

	number of children ever born	number of surviving children	percent of total births
Women under 25			
1.	1	1	.4
2.	1	1	.4
3.	1	1	.4
4.	1	1	.4
5.	1	1	.4
6.	1	1	.4
7.	1	1	.4
8.	1	1	.4
9.	1	1	.4
10.	1	1	.4
11.	1	1	.4
12.	2	2	.7
13.	3	3	1.1
14.	3	3	1.1
15.	3	3	1.1
16.	3	3	1.1
17.	4	4	1.4
18.	5	3	1.8
		(sub total	12.7)
Women 25-39			
1.	1	1	.4
2.	1	1	.4
3.	2	2	.7
4.	2	2	.7
5.	2	2	.7
6.	2	2	.7
7.	3	1	1.1
8.	3	3	1.1
9.	4	3	1.4
10.	4	3	1.4
11.	4	4	1.4
12.	4	4	1.4
13.	4	4	1.4

TABLE 10 - Continued.

• 163
*199

	number of children ever born	number of surviving children	percent of total births
14.	5	5	1.8
15.	5	5	1.8
16.	5	5	1.8
17.	6	3	2.1
18.	6	4	2.1
19.	6	5	2.1
20.	6	6	2.1
21.	6	6	2.1
22.	6	6	2.1
23.	8	6	2.9
24.	8	6	2.9
25.	8	7	2.9
26.	8	8	2.9
27.	9	4	3.2
		(sub total	45.6)
Women 40-54			
(40-44)			
1.	8	8	2.9
2.	10	9	3.6
3.	11	4	3.9
4.	13	12	4.6
(45-54)			
5.	12	10	4.3
6.	13	11	4.6
7.	14	10	5.0
		(sub total	28.9)
Women 55 and Older			
1.	4	2	1.4
2.	4	4	1.4
3.	4	4	1.4
4.	5	5	1.8
5.	6	5	2.1
6.	7	5	2.5
7.	7	5	2.5
		(sub total	13.1)

163 *177 The number of children ever born range between four and seven to those women who are fifty-five or older. The range is eight to fourteen for the women between forty and fifty-four. In other words, the seven women fifty-five and older have had a total of thirty-seven children of which thirty survived to adulthood. To date, the seven women forty to fifty-four have had a total of eighty-one children of which sixty-five survive. And some women in this younger age group have not ceased reproducing. The women in this category are subdivided into those forty to forty-four and those forty-five to fifty-four so that further reproductive potential is evident. The average is 5.3 children ever born with 4.3 surviving to adulthood for the women fifty-five and older. For the women forty to fifty-four, the average is 11.6 children ever born with 9.3 surviving. This is more than a doubling of the number of births as well as those children surviving.

The 1960 Government census provides a check on the age group of women fifty-five and older. At that time, these women were forty-five and older. Birth records collected at that time are reported in Table 11. The same pattern of a greater number of births to younger women is apparent.

842 [889] [278] Concerning a popular knowledge of contraception, ignorance for the most part is expressed by both men and women. It is known that older women can identify a small leaf and a vine which boiled together and administered as a drink is supposed to render a woman permanently sterile. No one is reported to have used this measure. An effective method, infanticide, is practiced.[16] This may occur with a young

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[TEXT CONTINUED ON PAGE 71]

2: Adams E-4,5 (1970-1971) 1973 SR9 Carib SR9
(1932-1971) Barama River

TABLE 11

NUMBER OF CHILDREN EVER BORN TO WOMEN, 1960*

• 163

Number of Children	Women under 45	Women 45-64
no children	32	2
1 child	19	1
2 children	16	2
3 children	20	1
4 children	13	5
5 children	16	2
6 children	7	5
7 children	4	2
8 children	6	-
9 children	1	-
10 and more children	4	1
Totals	138	21

*table compiled from page 11 A-31 of the 1960 Government Census

This may occur with a young mother with an insecure relationship with the father or a child that is not her husband's. Also, a poor subsistence situation may inspire a woman to neglect or kill her infant. From the confidences expressed, there have occurred about five cases of infanticide over the last ten years. Aside from these measures, some women have expressed desires to limit the number of children they produce but profess a lack of knowledge on how to do so. With every fertile woman approaching the fulfillment of a potential to reproduce twelve to thirteen children, the implications for accelerating population growth are apparent. Also, with medical attention and other government assistance, the number of children who survive has increased.

Over the last forty years, the reproductive pattern of the Upper Barama River Carib population seems to have responded to changes in economic conditions. There is no evidence to demonstrate that this population was ever in any long period of equilibrium with regard to its size, or well regulated by cultural practices to maintain it below any direct relationship to fluctuations in local food resources. On the contrary, it appears that this population previously underwent conditions of famine from time to time. King (1968:16) reports a drought for Guyana every thirteen to fourteen years. Although there are no direct records kept for the Upper Barama River area, there are indications of periodic local food shortages. In the six years previous to the establishment of development programs at Baramita Air Strip, the Government was called upon twice to send relief food packages to the Caribs not directly involved in mining. However, by this time, the total population was influenced by the mining

economy. The most suggestive insight into a longer familiarity with conditions of famine comes from popular stories. Cannibalism and other drastic measures in times of subsistence crises are a pronounced and recurrent theme.

It would appear that the behavioral measures designed to limit population have been practiced mainly during times of subsistence stress. Decisions regarding population control were probably made by the mother alone relative to her own circumstances.[17] The net result was a relatively limited rate of reproduction for the total population. These solutions were abandoned as subsistence stresses were alleviated by the availability of external resources. Since the introduction of employment and other market opportunities and government subventions after 1940, the Upper Barama River Carib population has not been subject to fluctuations in local resources. Even those segments of the population not directly employed have been affected. The point to emphasize is that external resources need not have been constantly available to the total population to affect the reproductive pattern of the total population. Only some access to external resources conveyed through regional networks of exchange needed to be available during times of subsistence crisis.

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[361]
[103]
[197]
*[179]

a difference in language spoken by these two groups of people. However, all such Carib language distinctions are being rapidly lost as the language is undergoing modification with the increased centralization of the population and reliance on English.

[7]Baramita and Baramita Air Strip are two separate settlements.

[8]This number was depleted by thirty-two. These people recently had gone to Matthew's Ridge. Also, the entire population of Anama, thirty-two persons, had gone with them. At this time, nineteen from In Time had gone to Matthew's Ridge as well.

[166] [9]This common size may represent a decrease in the mobility of the Carib population among different remote settlements as reported by Gillin.

[10]An old man and wife, too decrepit to travel, were located at Piai.

[127] [11]Data for this necessarily diachronic perspective on the population sizes are available from a variety of sources. These include Gillin's census data (1936), government census estimates and records, reports of the Malaria Eradication Programme, voting registration lists, and population data collected in the Upper Barama River area during the 1970-71 field work. The diversity of these quantitative [163] reports presents several problems. First of all, the Caribs do not record their birth dates. Nor do they place any emphasis on remembering how old any individual is. Consequently, all recorded ages are estimates made by the observer. Some age data were collected by the nominal categories of adult and child. Furthermore, with varying purposes for collecting population data, territorial units have not been consistent. In different enumerations the Upper Barama River area has been aggregated with portions of adjacent territory. Although these data limitations underscore the conditions of less than laboratory control involved in studying human behavioral adaptations, they do not preclude inquiry.

[184] [12]Among the Carib women at Baramita Air Strip this pattern appears to be particular to each woman and not related to seasons or other cyclical events.

Kloos reports a similar pattern for the interval between births for the Maroni River Caribs of Surinam. In this instance, women are tending to reproduce a child every thirty months over a period of thirty years (1971:102).

[13]Of course, this calculation does not account for twins or other [845] multiple births. Among the Carib women at Baramita Air Strip, two have given birth to twins which are discriminated against in no way.

*177 439 Throughout the time period under consideration, commercial trade goods have been incorporated, mostly by way of substitution for their [412] [415] [195] local equivalent. Axeheads, cutlasses, knives, iron griddle pans, cotton cloth, and shotguns reached the population in varying degrees at the time of Gillin's study (1934:332). These trade goods did not lose their popularity. They have been added to by other external resources and their quantity and availability have been increased. [163] [161] [511] [621] Eventually, a flow of external goods and services into the Upper Barama River area has resulted in an increased birth rate and an increasing population size, an improved standard of living, and changes in the social organization of the population.

*177 175 443 [484] However, markets have been introduced and controlled by external agents. As has already been explained, the Upper Barama River Caribs do not have easy access to regional markets. They do not travel to transact regional exchanges. Rather, they have depended on the opportunities provided by non-Carib middlemen who reside in the Upper Barama River area and who have good access to the limited transportation and communication facilities. As characteristic of the conveyance of regional exchanges into remote areas, market opportunities have been highly personalized. This was characteristic of the early period of porknocking activities and the existence of the gold [657] companies. Personalized market networks continue to be associated with government programs and services at Baramita Air Strip.

*177 195 437 439 Market Opportunities Provided by the Early Gold Seekers

The earliest regional exchanges reported for these Caribs involved

the porknocker would bring on his next trip from Georgetown. However, relations with porknockers remained as transient as the porknocking operations themselves.

In short, these early opportunities were of a windfall nature. Neither porknocker nor Carib was economically bound to the other. Thus, these were associational relationships. With the establishment of trust, both the porknocker and Carib cooperated for mutual benefit. If a porknocker abused an Amerindian, he and often others would no longer work for this person. The reputations of Amerindians were also important. These early, individualized exchanges served to bring in trade goods which were incorporated into the existing subsistence pattern of the population. However, it was not until the presence of the mining companies that market opportunities were localized and of a sufficiently permanent nature to affect the local Carib subsistence routine.

Markets Introduced by the Gold Companies

Population data suggest that there are significant changes in the nature of reproduction among the Carib population in the time periods before and after 1940, when mining companies were first established in the Upper Barama River area. A more precise investigation of the relationship of the local population to new market opportunities introduced by the gold mining companies is in order. It is not assumed that there is a definable equation between the quantity of trade goods reaching this population and an increased rate of birth. The process of adaptation to these new markets does not appear to be

*177 175 • 163 511 that simple. Rather, guns and iron tools substituted for tools fashioned from bush materials tended to increase the efficiency of the exploitation of the rain forest. In addition, the more permanent availability of clothing, medical care, and food supplies tended to override any cyclical changes in local subsistence resources which would affect population size. Moreover, at no time were detailed records kept of the quantity of trade goods which reached this population as a consequence of the activities of gold mining companies, and at the onset of field work, these patterns of exchange no longer existed. Nevertheless, these regional networks of exchange and the involvement of the Carib population can be reconstructed.

*177 175 464 All the mining companies introduced some exchange opportunities. Only Baird's company, which persisted for over thirty years, significantly involved the local population. Only Carib men were employed as the work included carrying loads, hunting, cutting fields, and mining activities. Also, a majority of the adult men in the Carib population was never employed at one time. Yet, the employment opportunities resulted in channels for the dispersion of exchanges to a wider section of the population.

During the initial establishment of the companies, the Caribs did not comprise a reliable labor force. Laborers were brought in from Georgetown. While the Axel Johnson Company was still in operation, Baird and his partner had some problem with the desertion of coastal laborers. As a big company, Axel Johnson paid higher wages. Of course, the competition ceased when the Axel Johnson Company was closed. There occurred other problems in relation to the number of